HỘI HÔ HẤP
THÀNH PHỐ HỒ CHÍ MINH

HỘI NGHỊ THƯỜNG NIÊN HỘI HÔ HẤP - HRS 2026
THE ANNUAL CONFERENCE OF THE HO CHI MINH RESPIRATORY SOCIETY

# ĐIỀU TRỊ NHIỄM KHUẨN MDR/XDR TẠI ICU – IDSA 2025

**BS.CKII Thái Minh Thiện**
**PGĐ – TK HSCC BV Tim Tâm Đức**

VŨNG TÀU, TP.HCM - NGÀY 21 THÁNG 3 NĂM 2026

HRS 2026

# NỘI DUNG CHÍNH

1. Các Phác đồ điều trị AB từ IDSA 2023
2. Tình hình đề kháng AB hiện nay
3. Các phác đồ điều trị AB - IDSA 2025

# Carbapenem-Resistant *Acinetobacter baumannii* (CRAB)

Click on the antibiotic for dosing info!

**Culture grew *Acinetobacter baumannii***

*Acinetobacter can be a colonizer & thus may not require treatment. Clinical correlation is important to prevent unnecessary antibiotic therapy.*

## Mild Infection[b]

**Ampicillin-Sulbactam Sensitive?**

- YES → **Ampicillin-Sulbactam As Monotherapy**
- NO → **Cefoperazone-Sulbactam Sensitive?**
  - YES → **Cefoperazone-Sulbactam (High Dose) As Monotherapy**
  - NO → **Polymyxin B** *(Non-UTI Infection)* OR **Colistin** *(Urinary Infection)* OR **Minocycline**[a] *(Non-UTI Infection)*

***If not responding, treat as per moderate-severe infection***

## Moderate to Severe Infection[c]

**TWO Drugs Combination Therapy***

** Until clinical improvement is observed*

### First Agent

**Ampicillin-Sulbactam* (High Dose)**

** For moderate-severe disease, Unasyn is recommended regardless of Unasyn susceptibility*

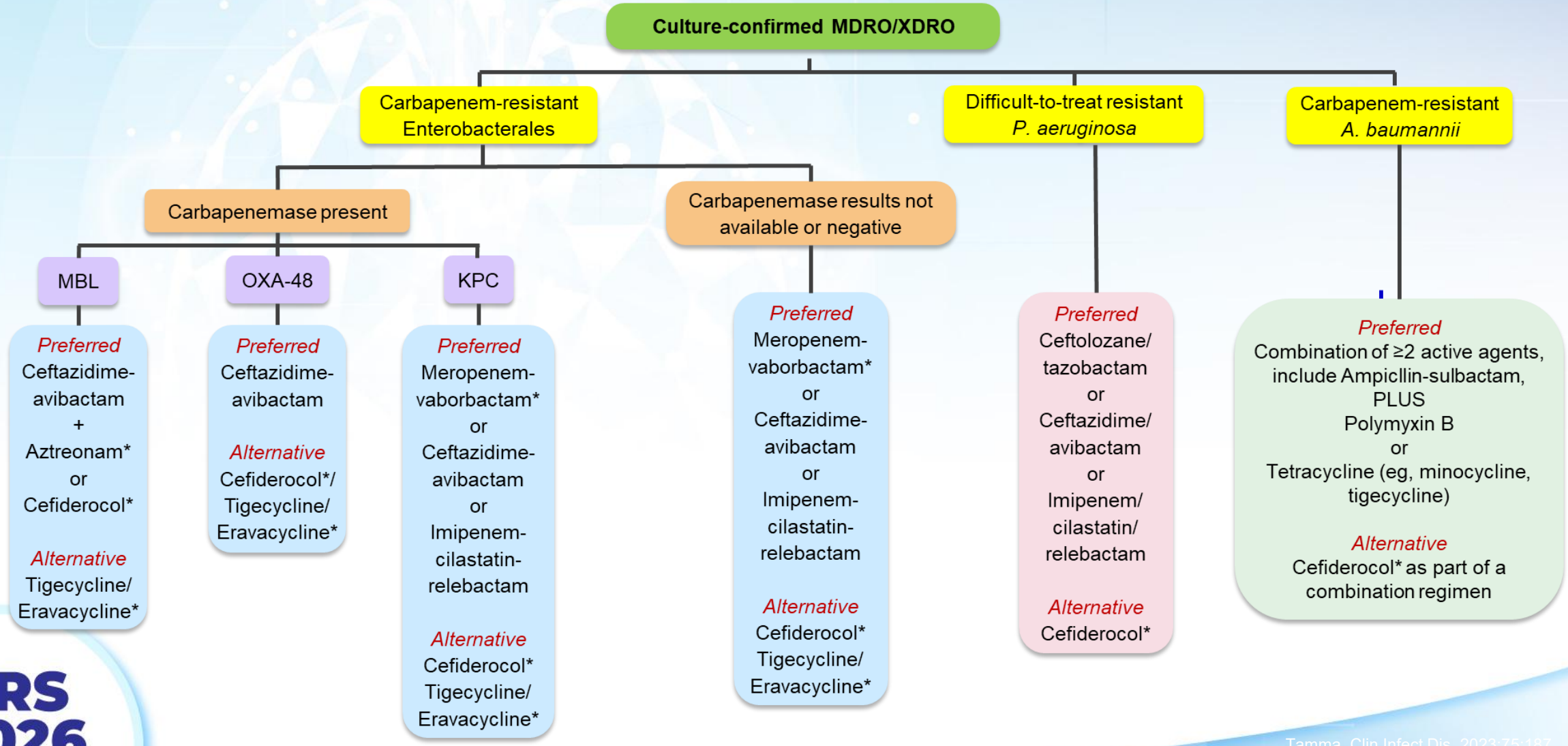
**PLUS**

### Second Agent

- **Polymyxin B** *(Non-UTI Infection)*
  OR
- **Colistin** *(Urinary Infection)*
  OR
- **Minocycline**[a] *(Non-UTI Infection)*

**2026**

# 2023 IDSA Guidance: Lựa chọn kháng sinh theo tác nhân




HRS 2026

Tamma. Clin Infect Dis. 2023;75:187.

Trích dẫn được hiệu chỉnh để không bao gồm các thông tin ngoài nhãn được phê duyệt

# Nhiễm trùng do *Klebsiella pneumoniae* đa kháng: kháng sinh mới

Các kháng sinh mới có hoạt tính trên *Klebsiella pneumoniae:* tùy vào kiểu gen kháng thuốc

| | *Enterobacterales* | | | | | |
|---|---|---|---|---|---|---|
| | Class A Carbapenemase (*e.g.* KPC) | Class B Carbapenemase (*e.g.* NDM) | Class D Carbapenemase (*e.g.* OXA-48) | *Pseudomonas aeruginosa* | *Acinetobacter baumannii* | *Stenotrophomonas maltophilia* |
| Ceftobiprole | | | | | | |
| Ceftolozane-tazobactam | | | | | | |
| Ceftazidime-avibactam | | | | | | |
| Cefiderecol | | | | | | |
| Meropenem-vaborbactam | | | | | | |
| Imipenem-relebactam | | | | | | |
| Aztreonam-avibactam | | | | | | |
| Plazomicin | | | | | | |
| Eravacycline | | | | | | |

Eur Respir Rev 2022; 31: 220119

# ĐIỀU TRỊ NHIỄM KHUẨN GRAM ÂM ĐA KHÁNG

Active
Variable
Not recommended

| | | Enterobacterales | | | | | Lactose non-fermenting organisms | |
|---|---|---|---|---|---|---|---|---|
| | Typical dosing regimen for serious infections[11,110,111] | Extended-spectrum β-lactamase-producing Enterobacterales | AmpC β-lactamase-producing Enterobacterales | Ambler class A carbapenemases (eg, KPC and IMI) | Metallo-β-lactamases (eg, NDM, VIM, and IMP) | Ambler class D carbapenemases (eg, OXA-48) | Difficult-to-treat resistant *Pseudomonas aeruginosa* | Carbapenem-resistant *Acinetobacter baumannii* |
| **β-lactam** | | | | | | | | |
| Ceftolozane–tazobactam | 3 g IV every 8 h, infused over 3 h | | | | | | | |
| Ceftazidime–avibactam | 2·5 g IV every 8 h, infused over 3 h | | | | | | | |
| Meropenem–vaborbactam | 4 g IV every 8 h, infused over 3 h | | | | | | | |
| Imipenem–relebactam | 1·25 g IV every 6 h, infused over 30 min | | | | | | | |
| Cefiderocol | 2 g IV every 8 h, infused over 3 h | | | | | | | |
| Ceftazidime–avibactam and aztreonam | Ceftazidime–avibactam: 2·5 g IV every 8 h, infused over 3 h plus aztreonam: 2 g IV every 8 h, infused over 3 h* | | | | | | | |
| Aztreonam–avibactam | 2 g/0·67 g loading dose then 1·5 g/0·5 g every 6 h, infused over 3 h | | | | | | | |
| Cefepime–enmetazobactam | 2 g/0·5 g every 8 h, infused over 4 h | | | | | | | |
| Sulbactam–durlobactam† | 1 g of each drug IV every 6 h, infused over 3 h† | | | | | | | |
| **Tetracycline derivative** | | | | | | | | |
| Eravacycline | 1 mg per kg IV every 12 h | | | | | | | |

**Multidrug-resistant Gram-negative bacterial infections,** Macesic, Nenad et al. The Lancet (2025), Volume 405, Issue 10474, 257 - 272

CURRENT OPINION

# Management of MDR/XDR severe infections in the critically ill

*Luca Mezzadri*[a,b], *Ya-Ting Chang*[a,c] *and David L. Paterson*[a,d]

| MDRO (GNB) | ESCMID [50] | IDSA [5▪▪] | Relevant clinical trials [reference] | Combination therapy or monotherapy preferred? | Other agents currently in dinical trials |
|---|---|---|---|---|---|
| CRE | **Preferred**<br>CRE<br>New BLBLI: meropenem-vaborbactam, ceftazidime-avibactam<br>CRE with MBL<br>Cefiderocol<br>Ceftazidime-avibactam plus aztreonam | Preferred<br>CRE without carbapenemase<br>Meropenem or imipenem (extended infusion) – when MIC ≤1 mg/L<br>New BLBLI: Ceftazidime-avibactam, meropenem-vaborbactam, imipenem-cilastatin-relebactam<br>CRE with MBL<br>Ceftazidime-avibactam plus aztreonam (aztreonam-avibactam[b])<br>Cefiderocol<br><br>CRE with KPC<br>New BLBLI: Ceftazidime-avibactam, meropenem-vaborbactam, imipenem-cilastatin-relebactam<br>CRE with OXA-48-like<br>Ceftazidime-avibactam | REVISIT [36▪], ASSEMBLE [39]<br>CREDIBLE-CR/APEKS-NP [37]<br>GAMECHANGER [38] | IDSA:<br>Monotherapy for the agents recommended in the guidance.<br><br>ESCMID:<br>Monotherapy for new BLBLI and cefiderocol<br>Combination therapy for agents other than the above-mentioned. | Cefepime-zidebactam<br>Cefepime-funobactam<br>Aztreonam-funobactam |
| | Alternative<br>If preferred regimens are not available, combination of at least two of the following:<br>Polymyxins<br>Aminoglycosides<br>Tigecycline<br>Fosfomycin<br>Meropenem (high-dose extended-infusion) - for isolate with MIC ≤8 mg/L | Alternative<br>CRE with KPC or OXA-48-like<br>Cefiderocol<br>When beta-lactam cannot be used<br>Tigecycline (high-dose), eravacycline | | | |
| | Against<br>Tigecycline in BSI and HAP/VAP | Against<br>Tigecycline, eravacycline in UTI or BSI<br>Polymyxins | | | |

CURRENT OPINION

# Management of MDR/XDR severe infections in the critically ill

*Luca Mezzadri*[a,b], *Ya-Ting Chang*[a,c] *and David L. Paterson*[a,d]

| MDRO (GNB) | ESCMID [50] | IDSA [5▪▪] | Relevant clinical trials [reference] | Combination therapy or monotherapy preferred? | Other agents currently in clinical trials |
|---|---|---|---|---|---|
| CRAB | Preferred: two in vitro active agents<br>Ampicillin-sulbactam (preferred when susceptible to sulbactam)<br>Polymyxins<br>Tigecycline (high-dose)<br>Aminoglycoside<br>Meropenem (high-dose extended-infusion) - for isolate with MIC ≤8 mg/L | Preferred<br>Sulbactam-durlobactam plus carbapenem | ATTACK [20] | Combination therapy preferred | Zosurabalpin<br>Intravenous rifabutin |
| | Against<br>Cefiderocol | Alternative<br>High-dose ampicillin-sulbactam (9g of sulbactam component) plus at least one susceptible agent:<br>- minocycline, preferred over tigecycline<br>- cefiderocol<br>- polymyxin B | CREDIBLE-CR [23], GAMECHANGER [38]<br>OVERCOME [21], AIDA [22] | | |

CURRENT OPINION

# Management of MDR/XDR severe infections in the critically ill

*Luca Mezzadri[a,b], Ya-Ting Chang[a,c] and David L. Paterson[a,d]*

Number 5 • October 2025

| | | | | | |
|---|---|---|---|---|---|
| ESBL-producer | Preferred<br>Meropenem or imipenem | Preferred<br>Meropenem or imipenem | MERINO [26] | Monotherapy | Tebipenem<br>Temocillin<br>Cephamycins |
| | Stepdown targeted therapy<br>Old BLBLI, quinolones, or TMP-SMX | Stepdown targeted therapy<br>TMP-SMX, levofloxacin or ciprofloxacin | | | |
| | Against<br>tigecycline, cephamycins, cefepime | Against<br>Piperacillin-tazobactam, cephamycins, cefepime | | | |

CURRENT OPINION

# Management of MDR/XDR severe infections in the critically ill

*Luca Mezzadri[a,b], Ya-Ting Chang[a,c] and David L. Paterson[a,d]*

| | | | | | |
|---|---|---|---|---|---|
| *S. maltophilia* | No recommendations | Any of the following two:<br>TMP-SMX<br>Levofloxacin<br>Minocycline<br>Cefiderocol<br>Or<br>Ceftazidime-avibactam plus aztreonam (aztreonam-avibactam[b]) | None | **IDSA:**<br>Preferred | None |

BLBLI, beta-lactam/beta-lactamase inhibitor; BSI, bloodstream infection; DTR, difficult-to-treat resistance; ESCMID, The European Society of Clinical Microbiology and Infectious Diseases; GNB, Gram negative bacilli; GPC, Gram positive cocci; HAP, hospital-acquired pneumonia; IDSA, Infectious Diseases Society of America; MBL: metallo-beta-lactamase; MDR, multidrug-resistant; MDRO, multidrug-resistant organism; TMP-SMX, trimethoprim-sulfamethoxazole; UTI, urinary tract infection; VAP, ventilator-associated pneumonia.

[a]This table focuses on recommendations for severe (sepsis or septic shock) and high-risk infections (pneumonia) for 2022 ESCMID guideline [50], and "infections outside of urinary tract" for 2024 IDSA guidance [5▪▪].

[b]Aztreonam-avibactam was not listed as an option in the 2024 IDSA Guidance as it had not been approved at that time.

# Management of MDR/XDR severe infections in the critically ill

Luca Mezzadri[a,b], Ya-Ting Chang[a,c] and David L. Paterson[a,d]





**Table 1** (*Continued*)

| MDRO (GNB) | ESCMID [50] | IDSA [5**] | Relevant clinical trials [reference] | Combination therapy or monotherapy preferred? | Other agents currently in clinical trials |
|---|---|---|---|---|---|
| CR-PA | DTR-CRPA<br>Ceftolozane-tazobactam | DTR-PA<br>Preferred<br>New BLBLI: Ceftolozane-tazobactam, ceftazidime-avibactam, imipenem-cilastatin-relebactam<br>Alternative<br>Cefiderocol<br>DTR-PA with MBL<br>Cefiderocol<br>MDR-PA<br>Preferred<br>Traditional β-lactams (high-dose extended-infusion)<br>Alternative<br>New BLBLI: ceftolozane-tazobactam, ceftazidime-avibactam, imipenem-cilastatin-relebactam – especially in critically-ill patients | RESTORE-IMI 1 [42]<br><br>CREDIBLE-CR [23], GAMECHANGER [38] | IDSA: monotherapy<br><br>ESCMID:<br>No recommendations were made, except that combination should be employed when using polymyxins, aminoglycosides, or fosfomycin. | Phage therapy<br>Cefepime-zidebactam<br>Ceftazidime-avibactam plus Fosfomycin |

# KẾT LUẬN

- Nhiễm Acinetobacter Baumani vẫn là tác nhân hàng đầu và là nguyên nhân gây tử vong chủ yếu tại ICU
- Các phác đồ Cefiderocol, Sulbactam + Colistin ngày càng kém hiệu quả
- Durobactam + Colistin +- Carbapenem là ưu tiên hiện nay cho đều trị Acinetobacter tại ICU
- Phối hợp Acinetobacater + Gien NDM1 ngày càng phổ biến – đây là thách thức mới đối với các BS ICU

HRS 2026


XIN TRÂN TRỌNG CẢM ƠN